

IN THE CLAIMS

Claims 1-29 (cancelled).

30 (new): An apparatus for transporting articles, the apparatus comprising:

a body, and a mechanism for picking up an article, holding the article proximate to the body when the body moves to transport the article, and releasing the article;

a thru-beam sensor attached to the body, wherein the thru-beam sensor's beam is broken when the article held by the apparatus is thicker than a first predetermined amount, but the beam is not broken when the article held by the apparatus is thinner than a second predetermined amount which is less than or equal to the first predetermined amount, wherein when the apparatus is not holding the article and the beam is not broken, then the beam becomes broken by an article to be picked up when the body is approaching the article to be picked up, and wherein when the apparatus is holding an article thinner than the second predetermined amount and the beam is not broken, the beam becomes broken when the body is approaching a surface at which the article is to be released;

circuitry for receiving a signal indicating if the beam is broken, and generating:

a signal indicating that the apparatus is holding an article thicker than the first predetermined amount when the apparatus is holding an article and the beam is broken;

a signal indicating that the apparatus is holding an article thinner than the second predetermined amount when the apparatus is holding an article and the beam is not broken;

a signal indicating that the body is approaching an article to be picked up when the apparatus is not holding an article and the beam becomes broken; and

a signal indicating that the body is approaching a surface at which an article is to be released when the apparatus is holding an article thinner than the second predetermined amount and the beam becomes broken.

31 (new): The apparatus of Claim 30 wherein the beam extends along the body and along the article.

32 (new): The apparatus of Claim 30 wherein the apparatus picks up the articles from above.

33 (new): The apparatus of Claim 30 wherein the apparatus comprises an end effector for transporting semiconductor wafers and pieces of packaging material, and the semiconductor wafers as well as pieces of packaging material inserted between the wafers are thinner than the second predetermined amount, but pieces of packaging material at an end of a stack of wafers are thicker than the first predetermined amount.

34 (new): The apparatus of Claim 30 wherein the mechanism comprises one or more gas vortex chucks.

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